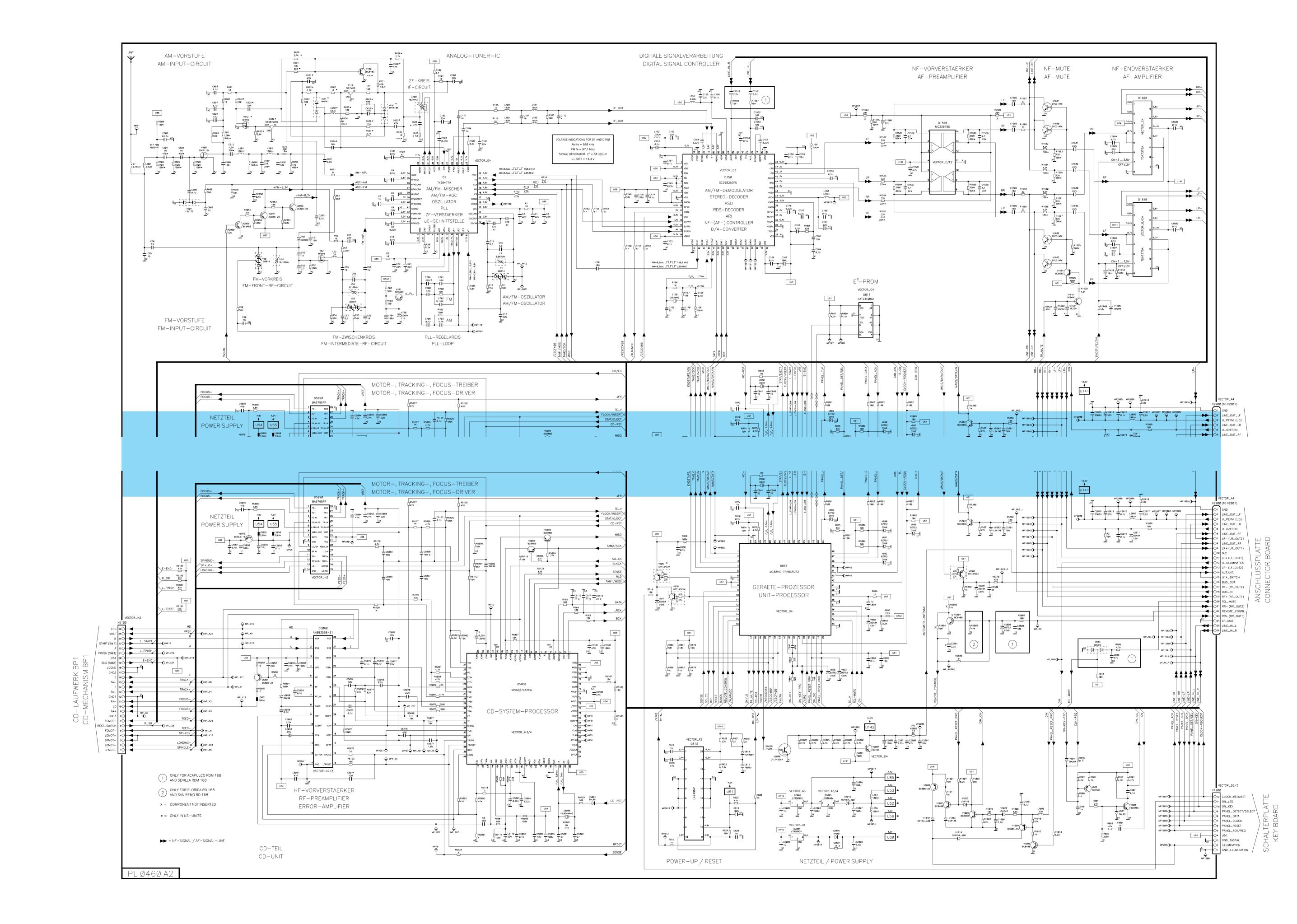


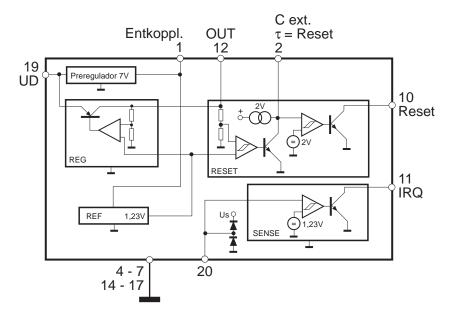
Prüfdiagnose Tuner IC (D1) Diagnosis test tuner IC (D1)								
Pin	Band	Frequenz	E'	Uss	Vermerke	Notice		
24+25 (ZF-OUT)	FM	97,1 MHz	83 dbμV	650 mVss	jeweils gegen Masse	respective against GND		
28	FM	97,1 MHz	80 dbμV	25 mVss				
31+32	FM	97,1 MHz	80 dbμV	200 mVss	jeweils gegen Masse	respective against GND		
31+32	AM	900 kHz	80 dbμV	200 mVss	jeweils gegen Masse	respective against GND		
34 (AM-IN)	AM	900 kHz	80 dbμV	50 mVss				
36	AM	900 kHz	ab 73 dbμV		künstliche Antenne aus	not commutated		
37	FM	97,1 MHz	ab 80 dbμV					
43 (FM-IN)	FM	97,1 MHz	94 dbμV	5 mVss				

Pin-Belegung des FM/AM Tuner-IC D1 Tuner IC D1 Pin configuration						
Pin No.	I/O	Name	Funktion	Function		
1	-	MIXDEC	Mischer Entkopplung	Mixer decoupling		
2	-	CINT	für PLL	for PLL		
3	-	CHOLD	für PLL	for PLL		
4	-	PLLGND	PLL - Masse	PLL Ground		
5	-	VCC	8,5V	8,5V		
6	-	VPLL	PLL Oberspannung	PLL top voltage		
7	-	LFINP	Schleifenfiltereingang	PLL loop filter Input PLL loop filter Output 1 PLL loop filter Output 2		
8	0	LF1	Schleifenfilter 1			
9	0	LF2	Schleifenfilter 2			
10	0	LF3	Schleifenfilter 3	PLL loop filter Output 3 Tuning voltage Oscillator Input		
11		VTUNE	Abstimmspannung			
12		OSCINP	Oszillator Eingang			
13	0	OSCOUT	Oszillator Ausgang	Oscillator Output		
14	-	OSCGND	Oszillator Masse	Oscillator Ground		
15	0	VCC	8,5V	8,5V		
16 17 18	0	OSCBUF DGND CS	Oszillatorausgangstreiber Digitale Masse Chip Select	Oscillator Buffer Output Digital Ground Chip Select		
19 20 21	 	RD CLK TX	Dateneingang Clock Datenausgang	DATA IN Clock DATA OUT		
22 23 24	- 0	FREF IFAGC2 IFOUT1	Referenzfrequenz ZF Regelspannung 2 ZF - Ausgang 1	Reference frequency IF AGC 2 IF output 1		
25	O	IFOUT2	ZF - Ausgang 2	IF output 2 IF AGC 1 IF Ground		
26	-	IFAGC1	ZF Regelspannung 1			
27	-	IFGND	ZF Masse			
28 29 30	- -	IFIN VDC VCC	ZF Eingang Interne Referenzspannung 8,5V	IF Input Internal reference voltage 8,5V		
31	0	MIXOUT2	Mischerausgang 2	Mixer Output 2		
32	0	MIXOUT1	Mischerausgang 1	Mixer Output 1		
33	-	AMREF	AM - Referenzeingang	AM reference Input		
34	I	AMMIXIN	AM Mischereingang	AM Mixer Input		
35	-	RFAGC3	HF Regelzeitkonstante (aufregeln)	RF AGC 3		
36	0	RFAGCAM	HF Steuerspannung Vorstufe AM	RF AGC for AM input stage		
37	O	RFAGCFM	HF Steuerspannung Vorstufe FM	RF AGC for FM input stage		
38	-	MIXGND	Mischer Masse	Mixer Ground		
39	-	RFAGC2	HF Regelzeitkonstante (Detektor)	RF AGC 2		
40	-	RFAGC1	HF Regelzeitkonstante (abregeln)	RF AGC 1		
41	-	ANGGND	Analog Masse	Analog ground		
42	-	FMMIXREF	Referenzspannung FM Mischer	Reference voltage FM mixer		
43	-	FMMIXINP	FM Mischer Eingang	FM mixer input		
44		RFAGCD	AGC Entkopplung	AGC decoupling		

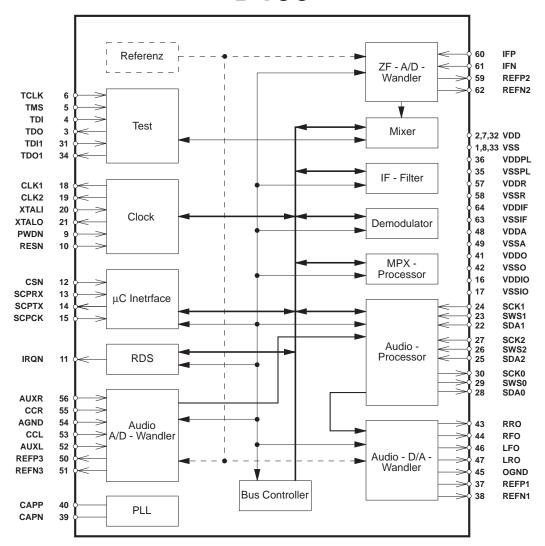
Pin-Belegung des IC D150 Digital IC D150 Pin Configuration							
Pin No.	I/O	Name	Funktion	Function			
1	-	VSS	Masse	Ground			
2	-	VDD	5 V	5 V			
4	I	TDI	Testdateneingang	Test Data Input			
5	1	TMS	Test Mode	Testmode			
6	1	TCKL	Test Clock	Testclock			
7	-	VDD	5 V	5 V			
8	-	VSS	Masse	Ground			
9	-	PWDN	Power down Zustand	Power down Mode			
10	I	RESN	Reset	Hardware reset (active LOW)			
11	O	IRQN	RDS Alarm/SLS	RDS alarm/search stop			
12	I	CSN	Chip select Eingang	Chip select μC interface			
13	I	SCPRX	Serielle Daten µC Interface	Serial data μC interface IN			
14	O	SCPTX	Serielle Daten μC Interface	Serial data μC interface OUT			
15	I	SCPCK	Clock μC Interface	Clock μC interface			
16	-	VDDIO	Plusspannung Digitale Ein-/Ausgänge	Voltage for digital I/O			
17	-	VSSIO	Masse Digitale Ein-/Ausgänge	Ground for digital I/O			
18	O	CKL1	Programmierbarer Clock 1	Programmable clock 1			
20	I	XTALI	28,5 MHz Oszillator	Oscillator 28,5 MHz			
21	O	XTALO	28,5 MHz Oszillator	Oscillator 28,5 MHz			
31	I	TDI1	Testdateneingang 1	Test Input 1			
32	-	VDD	5 V	5 V			
33	-	VSS	Masse	Ground			
35	-	VSSPLL	Masse (Minus) PLL	Ground (minus) PLL			
36	-	VDDPLL	Plus PLL 5V	PLL 5V (pos.)			
37	0	REFP1	Audio D/A-Wandler Positive Referenz	Audio D/A converter (pos. reference) Audio D/A converter (neg. reference) PLL capacity (neg.)			
38	0	REFN1	Audio D/A-Wandler Negative Referenz				
39	-	CAPN	PLL Kapazität (negativ)				
40	-	CAPP	PLL Kapazität (positiv)	PLL capacity (pos.) Audio D/A converter (+5V) Audio D/A converter (ground)			
41	-	VDDO	Audio D/A - Wandler 5V				
42	-	VSSO	Audio D/A - Wandler Masse				
44	O	RFO	Audio Rechts (analog)	Analogic audio right			
45	-	OGND	Masse Analogausgänge	Ground			
46	-	LFO	Audio Links (analog)	Analogic audio left			
48	-	VDDA	5V A/D - Wandler	5V A/D - converter			
49	-	VSSA	Masse A/D - Wandler	Ground A/D - converter			
50	O	REFP3	Audio D/A-Wandler Positive Referenz	Audio D/A converter (pos. reference)			
51	O	REFN3	Audio D/A-WandlerNegative Referenz	Audio D/A converter (neg. reference)			
52	I	AUXL	Externer Eingang links	Auxillary left			
53	I	CCL	Cassette Eingang links	Cassette input left			
54	-	AGND	Audioeingänge Masse	Ground for Audio inputs			
55		CCR	Cassette Eingang rechts	Cassette input right			
56		AUXR	Externer Eingang rechts	Auxillary left right			
57	-	VDDR	5 V	5 V			
58	-	VSSR	Masse	Ground			
59	O	REFP2	Audio D/A-Wandler Positive Referenz	Audio D/A converter (pos. reference)			
60 61 62	 	IFP IFN REFN2	ZF Eingang (plus) ZF Eingang (minus) Audio D/A-Wandler Negative Referenz	Positif IF input IF input (neg.) Audio D/A converter (neg. reference)			
63	-	VSSIF	ZF A/D - Wandler (minus)	IF A/D converter (-) IF A/D converter (+5V)			
64	-	VDDIF	ZF A/D - Wandler 5 V				

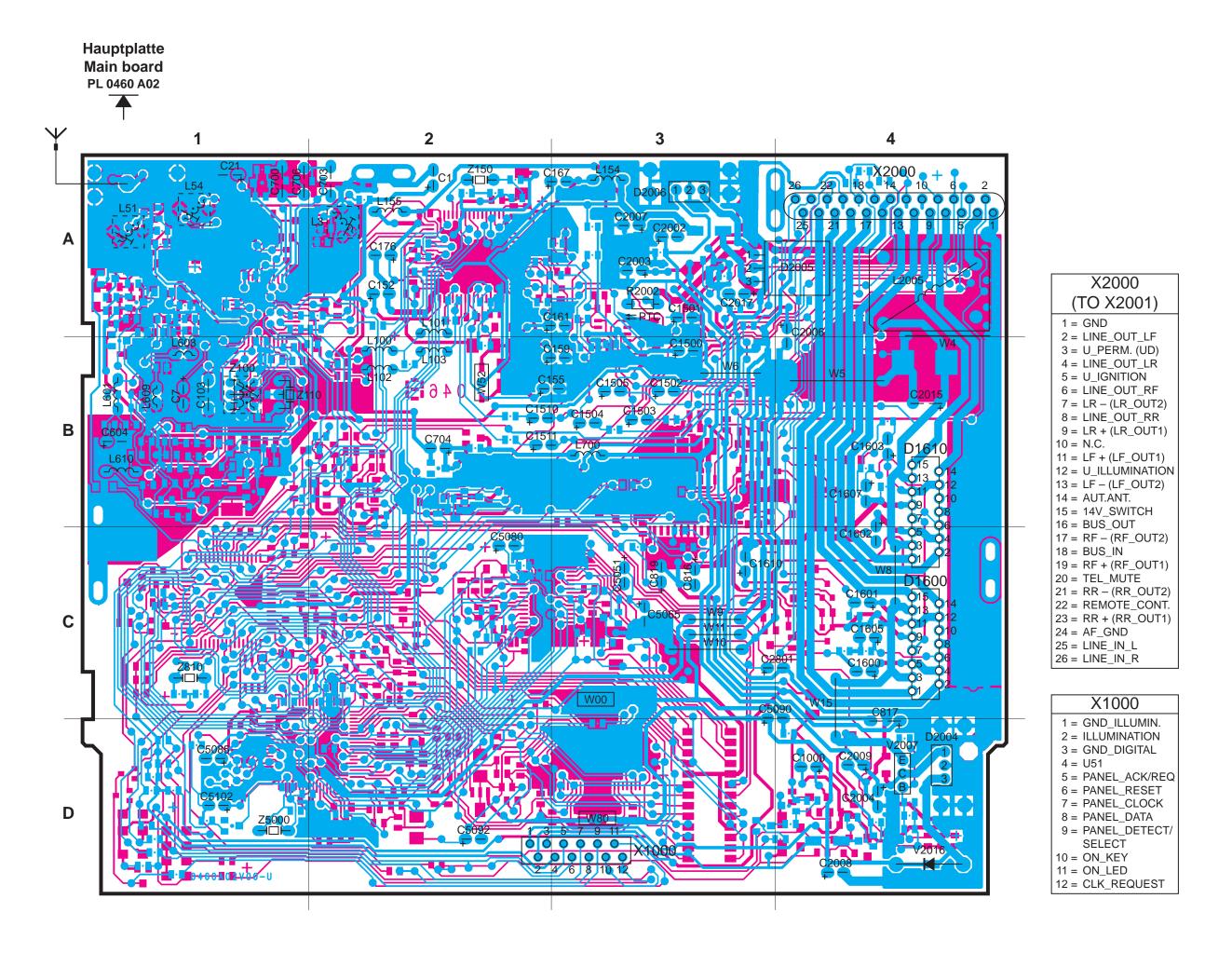


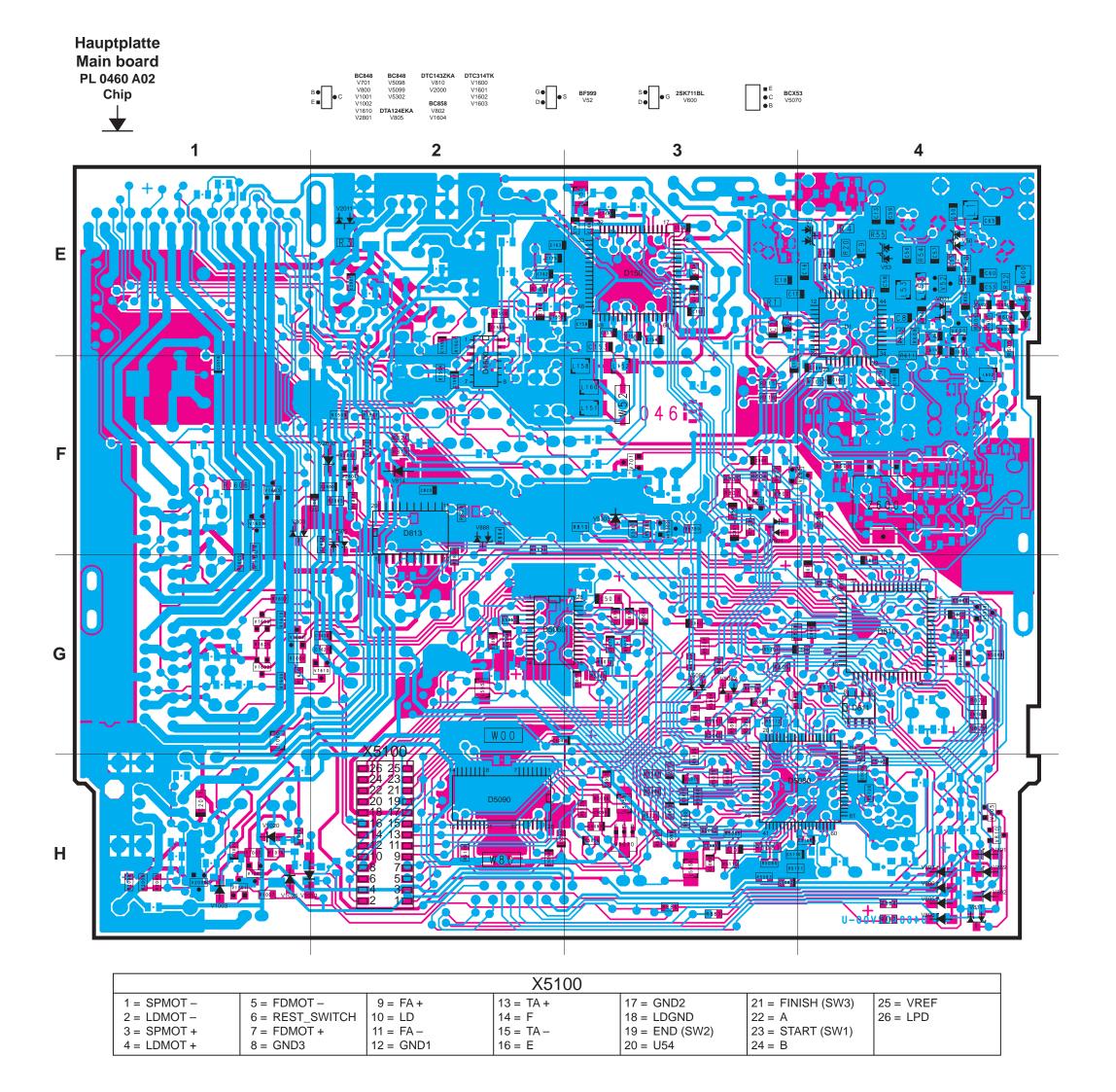
## L4949 / D813



## D150







Hauptplatte Main board PL 0460 A02 Chip





